

Claims

## 1. A control method

for managing the transmission capacity of at least one relay station of a transmission system,  
wherein the transmission system (Fig. 3) further comprises at least two transmitting stations (Fig. 4),  
at least one receiving station, and  
a control unit (CTRL) coordinating the at least one transmitting station, the at least one relay station and the at least one receiving station,

wherein

a respective transmitting station (Fig. 4) is designed so as to provide at least one type of traffic (IP) for transmission,

a respective receiving station is designed so as to receive this at least one type of traffic, and

a respective relay station is designed so as to route this at least one type of traffic from the transmitting station to the receiving station,

and wherein

the control unit coordinating the same is designed so as to perform the following steps of:

detecting (S51, S21) the traffic to be transmitted by the at least two transmitting stations, and

coordinating (S53; Fig. 7) the transmission of the traffic to be transmitted with consideration of traffic already coordinated before within a specified time window and frequency range allowed for the transmission of the traffic to be transmitted,

wherein the traffic to be coordinated is composed of traffic contributions whose traffic volume is defined by the duration of the traffic contribution and the required bandwidth of the traffic contribution, and wherein

coordinating is carried out such that, within the area of a frequency-time diagram defined by the allowed specified time window and the allowed frequency range, the area of the traffic contributions is maximized.

2. A method according to claim 1, moreover comprising the steps of:

discriminating (S22, S24) the types of traffic in the traffic to be transmitted,  
determining (S23, S25, S26) the type of transmission for the respective traffic in response to the discriminated type of traffic,  
transmitting the traffic in the determined type of transmission from the respective at least one transmitting station via the at least one relay station to the respective at least one receiving station.

3. A method according to claim 2, wherein discriminating is carried out by way of an identification denoting the type of traffic of the respective traffic.

4. A method according to claim 2, wherein discriminating is carried out by way of an input interface denoting the type of traffic of the respective traffic at which the traffic is input.

5. A method according to claim 1, wherein coordinating of the traffic contributions is carried out by way of the priority of the traffic contributions.

6. A method according to claim 5, wherein traffic contributions manually input by an operator are prioritized over real-time contributions which in turn have priority over store and forward contributions.

7. A method according to claim 6, wherein within the store and forward contributions the prioritization is carried out according to size so that within the store and forward contributions the largest traffic contributions to be transmitted are coordinated first.
8. A method according to claim 6, wherein the traffic contributions manually input by an operator and the real-time contributions occupy a fixed partial area within the area of a frequency-time diagram, while the store and forward contributions can be shifted within the area of the frequency-time diagram.
9. A control unit for managing the transmission capacity of at least one relay station of a transmission system, wherein the transmission system further comprises at least two transmitting stations, and at least one receiving station, wherein a respective transmitting station is designed so as to provide at least one type of traffic for transmission, a respective receiving station is designed so as to receive this at least one type of traffic, and a respective relay station is designed so as to route this at least one type of traffic from the transmitting station to the receiving station, and wherein the control unit includes: detecting means (S51, S21) for detecting the traffic to be transmitted, coordinating means for coordinating (S53; Fig. 7) the transmission of the traffic to be transmitted with consideration of traffic already coordinated before within

a specified time window and frequency range allowed for the transmission of the traffic to be transmitted, wherein the traffic to be coordinated is composed of traffic contributions whose traffic volume is defined by the duration of the traffic contribution and the required bandwidth of the traffic contribution, and wherein coordinating is carried out such that, within the area of a frequency-time diagram defined by the allowed specified time window and the allowed frequency range, the area of the traffic contributions is maximized; and control means which, in response to an output of the coordinating means, control the coordinated transmission of the traffic from the respective at least one transmitting station via the at least one relay station to the respective at least one receiving station.

10. A control unit according to claim 9, moreover comprising:

discriminating means for discriminating (S22, S24) the types of traffic in the traffic to be transmitted, determining means for determining (S23, S25, S26) the type of transmission for the respective traffic in response to the discriminated type of traffic.

11. A control unit according to claim 10, wherein the discriminating means are adapted to perform discrimination by way of an identification denoting the type of traffic of the respective traffic.

12. A control unit according to claim 10, wherein the discriminating means are adapted to perform discrimination by way of an input interface denoting the type of traffic of the respective traffic at which the traffic is input.

13. A control unit according to claim 9, wherein the coordinating means perform coordination of the traffic contributions by way of the priority of the traffic contributions.
14. A control unit according to claim 13, wherein traffic contributions manually input by an operator are prioritized over real-time contributions which in turn have priority over store and forward contributions.
15. A control unit according to claim 14, wherein within the store and forward contributions the prioritization is carried out according to size so that within the store and forward contributions the largest traffic contributions to be transmitted are coordinated first.
16. A control unit according to claim 14, wherein the traffic contributions manually input by an operator and the real-time contributions occupy a fixed partial area within the area of a frequency-time diagram, while the store and forward contributions can be shifted within the area of the frequency-time diagram.
17. A transmission system comprising at least one relay station, at least two transmitting stations (Fig. 4), at least one receiving station, wherein a respective transmitting station (Fig. 4) is designed so as to provide at least one type of traffic (IP) for transmission, a respective receiving station is designed so as to receive this at least one type of traffic, and

a respective relay station is designed so as to route this at least one type of traffic from the transmitting station to the receiving station, and  
a control unit (CTRL) according to any one of the claims 9 to 16 coordinating the at least one transmitting station, the at least one relay station and the at least one receiving station.